

4. CORRIDOR TRAVEL MARKETS

This chapter presents the survey results and trends for groups of routes, or individual routes, that may be considered as representative of a travel corridor for weekday ferry users. The focus of this chapter is on “corridor” geographic market segments of Washington State Ferries, and within each corridor, to provide some basic information on ridership patterns and travel modes, as well as travel characteristics and rider demographics. Corridors comprised of a single route will be discussed qualitatively in this section, as specific geographic, demographic, and travel data can be found in the individual route chapters.

Unlike the WSF System Plan, which places routes into groups by terminal locations, this analysis was a geographic review of passenger origin and destination locations. This market or passenger oriented analysis included a review of passenger origins and destinations at the system level and the route level in order to determine passenger travel-sheds within the WSF system. As this analysis focused on the geographic nature of ferry passenger origin and destination locations, the outcome or corridor grouping of the ferry routes varies from that of the WSF System Plan.

Based on the system-wide and route level geographic analysis of passenger origin and destination locations, two clear travel corridors emerged in the central Puget Sound region. These corridor markets or travel sheds are grouped by route as the Central Sound Corridor and the South Sound Corridor. The Central Sound market segment is comprised of the heavily used Seattle-Bainbridge, Seattle-Bremerton, and Edmonds-Kingston routes. The South Sound market segment includes the *north* Vashon Island group of routes; Southworth-Vashon, Fauntleroy-Vashon, Fauntleroy-Southworth, and Seattle-Vashon.

The geographic analysis also revealed that the Point Defiance-Tahlequah, Mukilteo-Clinton, and Port Townsend-Keystone routes individually function as distinct travel corridors. None of these three routes have travel-sheds that clearly fit into the above noted larger corridor groupings or any other route grouping. As a result, these routes are viewed as encompassing distinct market segments and travel-sheds. The corridor level discussion of these routes will be of a qualitative nature only, as specific demographic detail and survey results are covered in the individual route chapters.

Finally, in reviewing passenger origin and destination locations as well as demographics, it was determined that the geographic market or travel shed for the domestic Anacortes-San Juan and international Anacortes-Sidney, B.C. routes is much broader and different than those associated with other routes within the WSF system. This distinction as well as others regarding travel patterns and demographics are a function of the routes’ isolation away from major trip productions and attractions, the types of island destinations served, and the longer headways and crossing times. Whether considering the island routes separately or together, these factors hinder the formation of distinct travel-sheds, generally a component of commuter-oriented daily travel with considerable travel to common locations. Finally, the variety of trip purposes and influence of tourism within the San Juan Islands and Vancouver Island also creates a more disperse and non-repeating pattern of origin and destination locations. Based on this geographic analysis, the Anacortes-San Juan Islands-

Sidney routes were found to have small clusters of multiple origin and destination locations that did not coalesce to form a clear travel-shed. Put another way, the Anacortes-San Juan Islands-Sidney routes draw riders from all over Western Washington rather than serving as a distinct cross-Puget Sound corridor.

4.1 WEEKDAY PM PEAK RIDERSHIP BY CORRIDOR

Table 4-1 provides a general idea of the magnitude of travel, during the PM peak period, for the two central Sound corridors, the three single route corridors, and the San Juan Island routes. During the PM peak period, the Central Sound corridor has the greatest number of passengers and the largest proportion of walk-on passengers. The Central Sound corridor has an approximate PM peak period ridership of 13,700, with nearly 7,000 walk-on passengers (51%) and about 6,750 passengers boarding in a vehicle. The South Sound corridor has the next highest PM peak period ridership, at nearly 4,000 passengers. Boarding method patterns in the South Sound corridor are similar to those found in the Central Sound corridor, with a high percentage of walk-on passengers. While walk-on boarders do not account for as high a percentage of boardings as found in the Central Sound corridor, they do comprise about 35% of the South Sound corridor PM peak period ridership.

Table 4-1
1999 Weekday Survey PM Peak Period Ridership
by Boarding Method for Designated Corridor Market Segments

<i>Corridor Grouping</i>	<i>Walk Board</i>	<i>In-Vehicle Board</i>	<i>Total PM Peak Ridership</i>	<i>Share of System Total</i>
Central Sound Corridor	6,948	6,729	13,677	51.6%
South Central Sound Corridor	1,406	2,569	3,975	15.0%
Point Defiance - Tahlequah	110	579	689	2.6%
Mukilteo - Clinton	659	2,732	3,391	12.8%
Port Townsend - Keystone	37	413	450	1.7%
Anacortes - San Juans - Sidney*	495	3,817	4,312	16.3%
Totals	9,655	16,839	26,494	100.0%
Boarding Method Distribution	36.4%	63.6%	100.0%	

* Peak period defined as daily ridership demand

The Mukilteo-Clinton route is a single route corridor, yet during the PM peak period, has about the same total ridership as the South Sound corridor, with nearly 3,400 riders. However, the Mukilteo-Clinton route clearly has a different boarding method pattern than the two central Sound corridors, with walk-on passengers accounting for only 19% of PM peak period ridership, compared to 35% for South Sound.

The Point Defiance–Tahlequah and Port Townsend–Keystone routes are both quite small compared to the other defined travel-sheds, with nearly 700 and 450 riders respectively, during the PM peak period. The Point Defiance–Tahlequah boarding method patterns are similar to those found for the Mukilteo–Clinton corridor with about 16% of PM peak period ridership boarding as a walk-on passengers. Boarding method patterns on the Port Townsend–Keystone route are considerably different than the other corridors. Due to the removed location of the ferry terminals for this route and the lack of concentrated employment nearby, it is not unexpected that this corridor would have the lowest share of walk-on passengers, accounting for 8% of PM peak period ridership.

Last, the combined *daily* ridership on the highly seasonal Anacortes–San Juan Islands–Sidney routes accounts for about 16% of the system-wide PM peak period ridership. This percentage must be interpreted carefully, since the peak period for these routes was defined as the entire day, given the less frequent service and longer crossing times associated with ferry travel in the San Juan Islands.

4.2 CENTRAL SOUND CORRIDOR MARKET

The Central Sound Corridor market, comprised of the Seattle–Bremerton auto ferry and passenger-only routes, the Seattle–Bainbridge route, and the Edmonds–Kingston route, represent over half of the system-wide weekday PM peak ridership. Ridership on the Seattle–Bainbridge route is the highest in the Central Sound Corridor and accounts for just under half of the weekday PM peak and non-peak system-wide ridership. The Edmonds–Kingston route and the combined auto and passenger only Seattle–Bremerton ferries comprises approximately 25% each. WSF ridership statistics show that these four routes total approximately 56% of system-wide ridership on a daily and yearly basis as well.

4.2.1 Selected Corridor Demographics

Age distribution in the Central Sound Corridor looks very similar the 1999 system wide findings, which is not unexpected given this corridor’s share of system-wide ridership. As can be seen in Table 4-2, approximately 50% of all PM peak period riders are between the ages of 35 and 54, with a nearly even split between the age groups of 35 to 44 years and 45 to 54 years. In comparison to overall findings from the 1993 survey, passenger age distribution looks very much the same in 1999. The only difference is the shifting upwards of the average age. The largest adult age group is now 45 to 54 years of age, rather than 35 to 44 years as in 1993. As it has been six years since the previous survey, this is likely a function of the aging baby-boomer generation.

Age and gender distribution between the Central and South Sound Corridors are very similar, indicating that these different geographic markets are not necessarily demographically distinct. Both corridors have slightly more male passengers than female passengers.

Table 4-2
Weekday PM Peak Period Age Distribution by Gender –
Central Sound Corridor

<i>Age Category / Gender</i>	<i>1993 Survey System-wide Age Distribution</i>	<i>1999 Survey Central Corridor Age Distribution</i>	<i>Male Riders Age Distribution</i>	<i>Female Riders Age Distribution</i>	<i>Gender Not Given Age Distribution</i>
Under 18 Years of Age	1.2%	0.4%	0.2%	0.6%	0.5%
18 to 24 Years of Age	6.1%	6.5%	6.2%	6.9%	5.0%
25 to 34 Years of Age	18.2%	17.3%	17.1%	17.9%	14.3%
35 to 44 Years	29.1%	24.3%	25.3%	23.7%	18.5%
45 to 54 Years	23.2%	25.6%	26.9%	25.0%	17.4%
55 to 64 Years	10.1%	12.5%	13.5%	11.9%	6.4%
65 Years or More	8.1%	7.6%	7.7%	7.7%	6.4%
No Answer	4.0%	5.8%	3.1%	6.4%	31.5%
Ridership Gender Distribution	100.0%	100.0%	50.3%	45.8%	3.9%

4.2.2 Corridor Trip Purposes

Although both the 1993 and 1999 travel surveys collected detailed information about weekday PM peak period trip purposes, the survey questions and response choices varied between the surveys, and the raw data were aggregated differently for analysis purposes. Taking these two factors into consideration, it is not possible to make an exact comparisons between the 1993 and 1999 survey trip purpose results. Nonetheless, data for the work/school commute/business related trip purposes are directly comparable, and the other non-commute trip purposes are generally comparable.

As can be seen in Table 4-3, nearly three quarters of the weekday PM peak period trips in the Central Sound Corridor are for work/school commute or business related purposes, with a slight increase in this trip purpose grouping between the two survey years. At first glance, recreational travel appears to have decreased from 1993 to 1999, but this result may be largely due to the different grouping of the trip purposes between the two years (1993 included personal business and “other” with the recreational purposes.)

Table 4-3
Weekday PM Peak Period Trip Purposes – Central Sound Corridor

<i>1993 Trip Purposes</i>	<i>Shares</i>	<i>1999 Trip Purposes</i>	<i>Shares</i>
Work/School Commute & Business Related	68.7%	Work/School Commute & Business Related	73.1%
Recreation/Leisure/Personal Travel/Other	26.2%	Social/Recreational/Shopping/Sight-seeing	16.7%
Bus/Plane/Train Travel Connection	1.4%	Medical Appt./Personal Business/Other	10.2%
No Answer	3.7%		
Total	100.0%	Total	100.0%

4.2.3 Frequency of Ferry Travel

Table 4-4 presents frequency of use statistics for the 1999 survey PM peak period Central Sound Corridor travel. About 57% of surveyed riders reported making six or more one-way ferry trips per week, with nearly 41% making 10 or more trips per week. It is interesting to note that “part-time” riders – two to five trips in the past week – outnumber those that make six to nine one-way trips per week.

Table 4-4
Weekday PM Peak Period Frequency of Use – Central Sound Corridor

<i>Frequency of Use</i>	<i>Distribution</i>
1st Ride in Past 7 Days*	8.3%
2 to 5 Rides in Past 7 Days	23.6%
6 to 9 Rides in Past 7 Days	17.1%
10 or More Rides in Past 7 Days	40.6%
No Answer	10.3%
Totals	100.0%

* 1st Ride in Past 7 Days includes passengers who answered: 1st ride in past year and 1st ride ever.

4.2.4 Round Trip Patterns and Methods

Table 4-5 displays round-trip travel patterns, including the mode, route and time for the opposite half of the round-trip for which a respondent was surveyed. In the 1999 survey, 82% of passengers on the Central Sound Corridor routes reported that they were on the second half of a round trip during the PM peak period. Of the remaining 18%, 16% reported beginning a round-trip and 2% did not respond. Regardless of which half of a round-trip they were making, approximately 85% of PM peak period riders were using or would use the same ferry route to complete their travel. The number of passengers reporting a different ferry route for the other half of their round-trip averaged a bit over 5%, with the remaining riders using another mode such as a circumferential highway route, or not reporting.

Table 4-5
Weekday PM Peak Period Round-Trip Patterns and Methods —
Central Sound Corridor

<i>Round-Trip Segment & Method / Time</i>	<i>Today</i>	<i>Some Other Day</i>	<i>No Answer</i>	<i>Expanded Ridership</i>
Declared Initial Trip (Reported on 2nd Half of Round-Trip)				81.6%
Same Ferry Route	74.3%	3.0%	10.5%	9,800
Not Using Ferry System	2.0%	0.8%	0.5%	366
Different Ferry Route	4.4%	0.6%	0.4%	605
No Answer	2.3%	0.2%	1.0%	383
<i>Total Declared Initial Trip</i>	<i>83.0%</i>	<i>4.6%</i>	<i>12.4%</i>	<i>11,154</i>
Expected Return Trip (Reported on 1st Half of Round-Trip)				16.4%
Same Ferry Route	55.3%	18.0%	10.2%	1,869
Not Using Ferry System	2.4%	2.2%	0.4%	113
Different Ferry Route	2.5%	2.2%	0.5%	118
No Answer	3.7%	1.4%	1.1%	139
<i>Total Expected Return Trip</i>	<i>63.9%</i>	<i>23.8%</i>	<i>12.2%</i>	<i>2,239</i>
No Answer (Did Not Report Round-Trip Status)				2.1%
<i>No Answer</i>			<i>100.0%</i>	<i>284</i>
Expanded Ridership Total	10,693	1,043	1,941	13,677

4.2.5 Access Mode / Boarding Method / Egress Mode

This section presents and compares access and egress mode shares and boarding method distributions for the Central Sound Corridor between the 1999 and 1993 surveys. Note that the 1993 data were originally collected and presented in a different manner than the 1999 data. To facilitate comparison, the 1993 results were recomputed to approximate the methods and results presentation of the 1999 survey, which unlike the 1993 effort, implicitly assumed that all those who boarded in a vehicle also accessed and egressed the terminals in a vehicle. As such, the travel mode results are generally comparable between the two surveys, but small differences in the access and egress mode shares are as likely to be the result of differing collection methods as they are to be the result of real changes in behavior. Please see Section 3.5.2 in Chapter 3 for more information about these procedures.

As can be seen in Table 4-6 and Table 4-7, PM peak period boarding method trends observed in 1999 are quite similar to those found in the 1993 survey, with a fairly even split between walk-on and in-vehicle passenger boardings during the PM peak period. However, the mode share of walk-on ridership has increased in this corridor by about 3 percentage points since the 1993 survey. The Central Sound corridor has the largest percentage of walk-on passengers, at 51% during the weekday PM peak period.

On the whole, the majority of walk-on passengers are boarding as pedestrians (96%), with the percentage of passengers boarding with a bike remaining steady at approximately 3%. Just under one-half of all Central Sound Corridor ferry passengers are boarding in a vehicle, about one-third of those passengers were passengers in a vehicle rather than the driver. The average vehicle occupancy for this corridor during the PM peak period has remained steady from 1993 to 1999 at about 1.45.

Of PM peak period walk-on riders, nearly 50% arrived at the ferry terminal area via a pedestrian mode (walking or biking), down slightly from a reported 66% in 1993. Approximately 30% arrived by a vehicle, and 20% access the ferry terminal by a bus or shuttle. In comparison to 1993 results, it appears that persons who arrived to the ferry terminal by walking or biking are now taking a bus or shuttle (12% increase) or arriving by car (up 5%). When leaving the ferry terminal area, about 19% walked or biked, about 47% drove or rode as a passenger in a vehicle and just over 33% left via bus or shuttle service. Similar to the access mode results, it appears that riders who were walking or biking in 1993 from the terminal are now taking either a bus or shuttle to their destination. In the 1993 data, the "destination" may in fact have been a car parked away from the terminal. Nonetheless, much of the increase in bus and shuttle use is likely due to the increases in Kitsap Transit service undertaken between 1993 and 1999.

Table 4-6
Access Mode to Ferry – Boarding Mode – Egress Mode from Ferry
1993 Weekday PM Peak Period – Central Sound Corridor

<i>Access Mode to Ferry Terminal</i>	<i>Percent Distrib.</i>	<i>Boarding Method</i>	<i>Percent Distrib.</i>	<i>Mode Shares</i>	<i>Egress Mode from Ferry Terminal</i>	<i>Percent Distrib.</i>
Pedestrian/Bicycle	66.4%	Walked-On		47.8%	Pedestrian/Bicycle	37.0%
By Vehicle*	24.8%	Pedestrian	96.6%		By Vehicle*	49.9%
By Bus or Shuttle	<u>8.8%</u>	Pedestrian w/ Bicycle	<u>3.4%</u>		By Bus or Shuttle	<u>13.1%</u>
Total	100.0%	Total	100.0%		Total	100.0%
In-Vehicle	100.0%	In-Vehicle		52.2%	In-Vehicle	100.0%
		Vehicle Drivers*	68.5%			
		Vehicle Passengers	<u>31.5%</u>			
		Total	100.0%			
Total				100.0%		
Expanded Ridership Total				13,053		
* includes motorcycles						

Table 4-7
Access Mode to Ferry — Boarding Mode — Egress Mode from Ferry
1999 Weekday PM Peak Period — Central Sound Corridor

<i>Access Mode to Ferry Terminal</i>	<i>Percent Distrib.</i>	<i>Boarding Method</i>	<i>Percent Distrib.</i>	<i>Mode Shares</i>	<i>Egress Mode from Ferry Terminal</i>	<i>Percent Distrib.</i>
Pedestrian/Bicycle	49.5%	Walked-On50.8%			Pedestrian/Bicycle	19.2%
By Vehicle*	29.7%	Pedestrian	96.3%		By Vehicle*	47.2%
By Bus or Shuttle	20.8%	Pedestrian w/ Bicycle	3.7%		By Bus or Shuttle	33.6%
Total	100.0%	Total	100.0%		Total	100.0%
In-Vehicle	100.0%	In-Vehicle49.2%			In-Vehicle	100.0%
		Vehicle Drivers*	68.8%			
		Vehicle Passengers	31.2%			
		Total	100.0%			
Total				100.0%		
Expanded Ridership Total				13,677		
* includes motorcycles						

4.2.6 Corridor Trip Origins and Destinations

Figure 4-1 displays trip origin and destination locations for those weekday riders who boarded in a vehicle, whereas Figure 4-2 shows the trip origin and destination locations for persons who walked-on the ferry.⁴ When comparing walk-on passengers and those boarding in a vehicle, it is clear that many walk-on passengers are more likely to remain within close range of at least one ferry terminal. However, the range of origin and destination locations does seem to vary by route. In general, users of the Seattle-Bremerton route seem to have a considerably smaller range of locations than the other two routes in this corridor market. On the west side of Puget Sound, there are relatively clear concentrations at Bremerton and Bainbridge Island for the Seattle-Bremerton and Seattle-Bainbridge routes, respectively. Whereas, the Edmonds-Kingston route shows locations from south of Bremerton northward to Jefferson and Clallam Counties. This same pattern can be seen on the east side of Puget Sound. Travelers on the Seattle-Bremerton ferry largely remain in the City of Seattle. Patrons on the Seattle-Bainbridge ferry tend to remain in King County and riders on the Edmonds-Kingston ferry again show a much broader range of travel origins and destinations, from the Snohomish County line to central Pierce County.

This differences between the Seattle-Bremerton, Seattle-Bainbridge, and Edmonds-Kingston routes for in-vehicle boardings may be due to crossing times. Both the Seattle-

⁴ Figures 4-1 through 4-7 present origin and destination locations for PM peak period travelers as well as for a sample of travelers from the non-peak PM hours of the day.

Bainbridge and the Edmonds–Kingston routes have an approximate crossing time of 30 to 35 minutes, whereas the Seattle–Bremerton auto ferry takes 60 minutes to make the crossing (the Chinook class passenger-only ferries require 30 minutes.) Another consideration is the difference in headways for each of the three routes. The Seattle–Bremerton route has headways that are nearly double those on either the Seattle–Bainbridge or the Edmonds–Kingston routes. More frequent service and thus shorter wait times on the latter two routes may encourage a willingness to travel longer distances between the terminals and trip origins/destinations.

Based on this initial analysis, it appears that there is a considerable number of ferry riders who are traveling to and from Seattle and communities in north Kitsap County and communities in north Jefferson County. It appears that most respondents who are making this travel path are using the Seattle–Bainbridge and the Edmonds–Kingston routes, presumably making the choice of route based on their origin or destination.

Figure 4-1
Weekday Origin & Destination Locations for In-Vehicle Ferry Riders
Central Sound Corridor Market

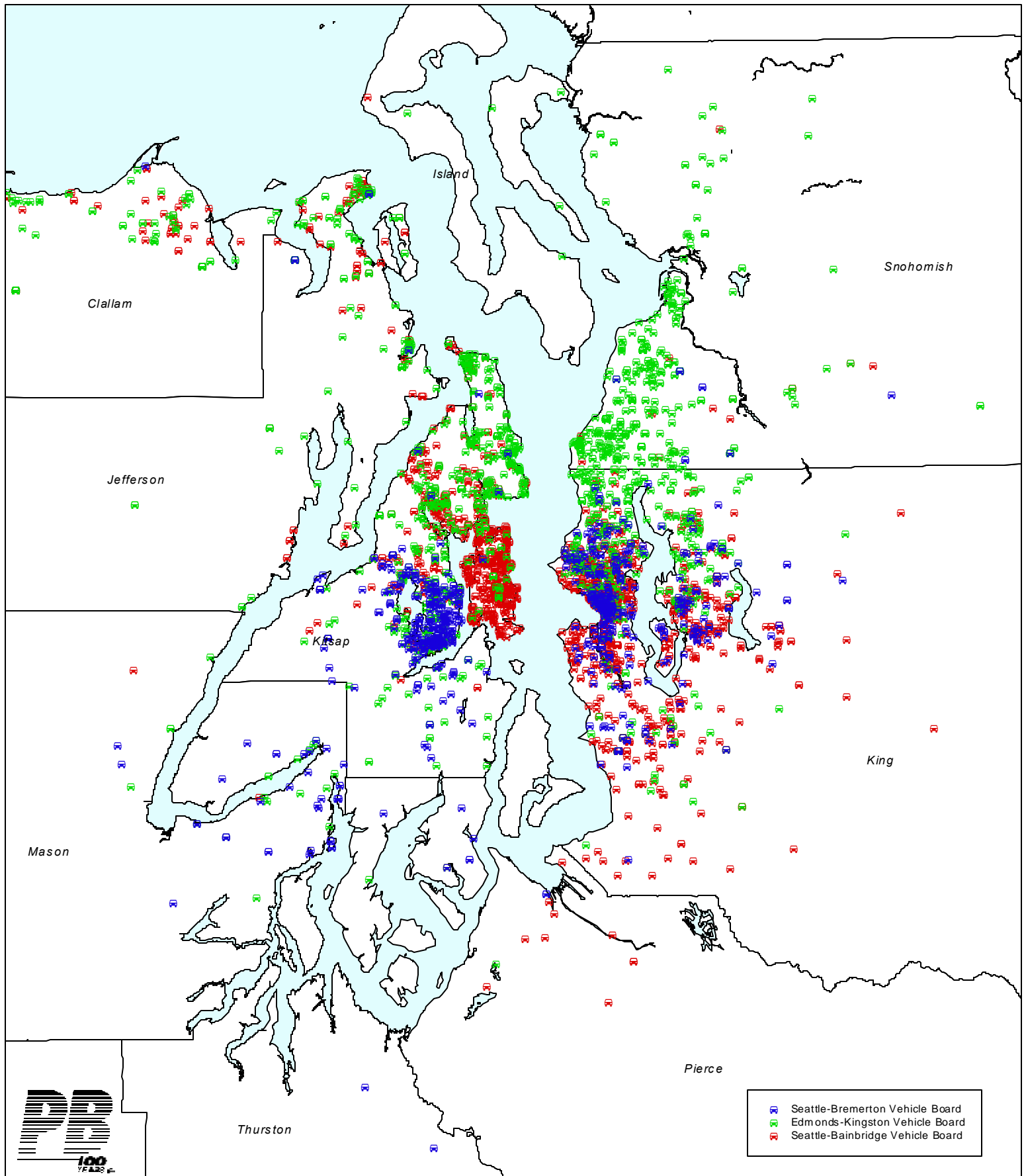
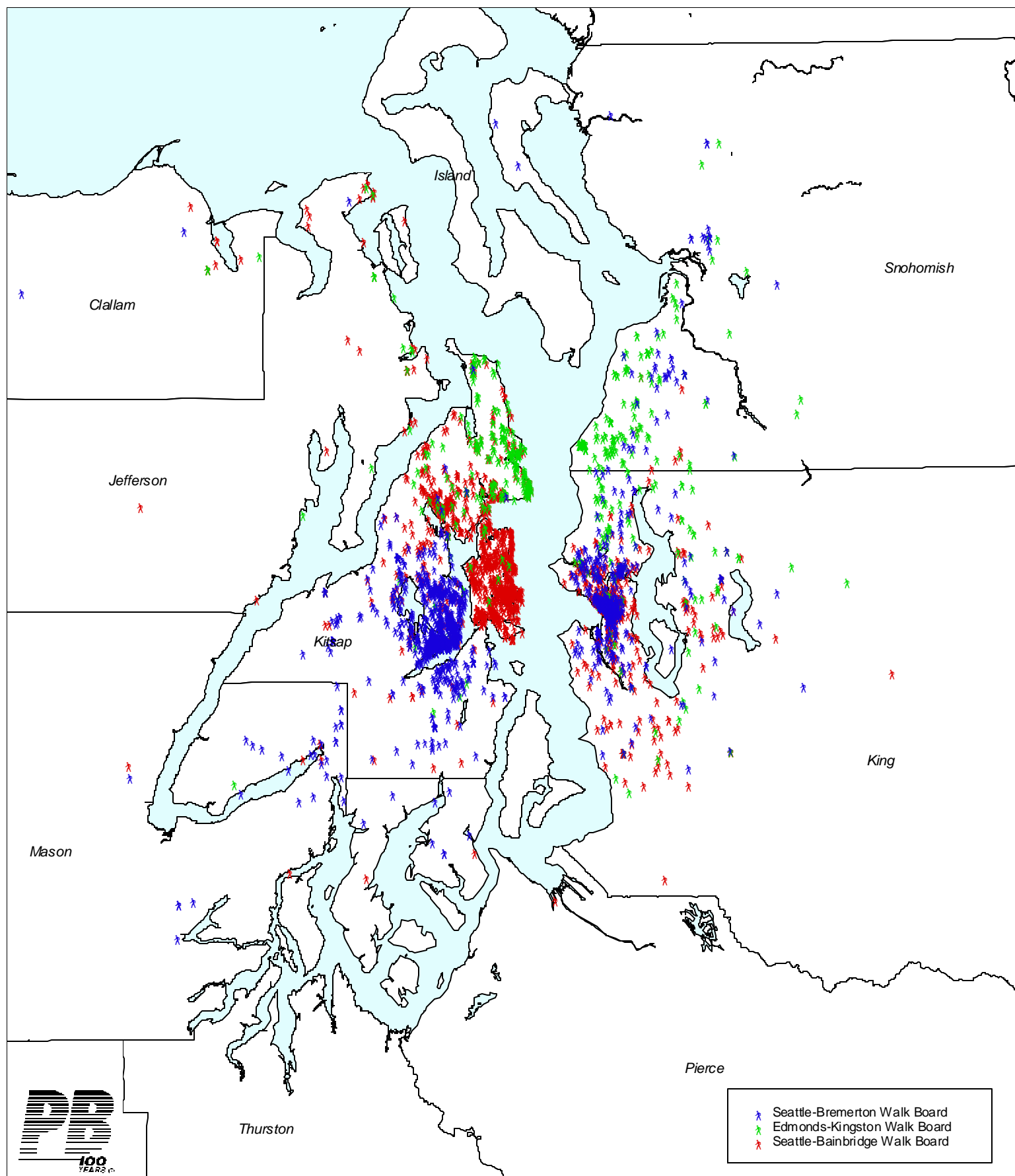


Figure 4-2
Weekday Origin & Destination Locations for Walk-On Ferry Riders
Central Sound Corridor Market



4.3 SOUTH SOUND CORRIDOR MARKET

The South Sound Corridor market is comprised of the Southworth–Vashon, Fauntleroy–Southworth, and Fauntleroy–Vashon auto ferry routes, and the Seattle–Vashon passenger-only route. This corridor market comprises approximately 15% of the system-wide weekday PM peak period ridership. Ridership on the Fauntleroy–Vashon route is the highest among the South Sound market segment and accounts for over half of corridor’s weekday PM peak period ridership. The Fauntleroy–Southworth route serves approximately 24% of the corridor’s PM peak riders, with the remaining two routes equaling about 19%. WSF ridership statistics show that these four routes represent approximately 13% to 14% of the average daily and annual system-wide ridership.

4.3.1 Selected Corridor Demographics

Similar to the findings of the Central Sound Corridor, the age distribution of PM peak period riders in the South Sound Corridor does not differ appreciably from the 1999 system-wide age distribution. As shown in Table 4-8, approximately half of the South Sound ridership is between 35 and 54 years of age. In comparison to the 1993 age distribution, the shift to an older average-age group (35 to 44 years vs. 45 to 54 years) is evident in the South Sound Corridor passenger statistics as was found for the Central Sound Corridor and the system as a whole.

The distribution of riders by sex in the South Sound is almost evenly split between males and females, resulting in a female share of ridership that is higher than the Central Sound Corridor and both the 1999 and 1993 system-wide survey results.

Table 4-8
Weekday PM Peak Period Age Distribution by Gender –
South Sound Corridor

<i>Age Category / Gender</i>	<i>1993 Survey System-wide Age Distribution</i>	<i>1999 Survey South Central Corridor Age Distribution</i>	<i>Male Riders Age Distribution</i>	<i>Female Riders Age Distribution</i>	<i>Gender Not Given Age Distribution</i>
Under 18 Years of Age	1.2%	1.6%	1.5%	1.7%	0.0%
18 to 24 Years of Age	6.1%	5.8%	4.4%	7.4%	0.0%
25 to 34 Years of Age	18.2%	16.8%	18.5%	15.8%	0.0%
35 to 44 Years	29.1%	23.9%	24.8%	23.9%	0.0%
45 to 54 Years	23.2%	26.5%	26.9%	27.3%	0.0%
55 to 64 Years	10.1%	12.8%	14.1%	11.9%	0.0%
65 Years or More	8.1%	4.4%	5.4%	3.6%	0.0%
No Answer	4.0%	8.3%	4.4%	8.4%	100.0%
Ridership Gender Distribution	100.0%	100.0%	49.6%	48.4%	2.0%

4.3.2 Corridor Trip Purposes

Although both the 1993 and 1999 travel surveys collected detailed information about weekday PM peak period trip purposes, the survey questions and response choices varied between the surveys, and the raw data were aggregated differently for analysis purposes. Taking these two factors into consideration, it is not possible to make an exact comparisons between the 1993 and 1999 survey trip purpose results. Nonetheless, data for the work/school commute/business related trip purposes are directly comparable, and the other non-commute trip purposes are generally comparable.

Table 4-9 presents weekday PM peak period trip purpose distributions for the 1993 and 1999 travel surveys. In 1993 nearly 73% of weekday PM peak travel in the South Sound Corridor was for a work/school commute or business related purpose. In 1999, the percentage of work/school or business related travel appears to have increased to 77%, with a corresponding decline in non-commute trip purposes. While the commuter trip share for this corridor is significantly higher than the system-wide average, the relative shares between social/recreation/shopping/sight-seeing and medical appointment/personal business/other trip purposes are the same as the system-wide proportions at 3:2.

In general, PM peak period trip purpose data verifies that the South Sound Corridor routes are the most commuter-oriented routes in the WSF system.

Table 4-9
Weekday PM Peak Period Trip Purposes – South Sound Corridor

<i>1993 Trip Purposes</i>	<i>Shares</i>	<i>1999 Trip Purposes</i>	<i>Shares</i>
Work/School Commute & Business Related	72.7%	Work/School Commute & Business Related	77.0%
Recreation/Leisure/Personal Travel/Other	15.4%	Social/Recreational/Shopping/Sight-seeing	13.7%
Bus/Plane/Train Travel Connection	0.9%	Medical Appt./Personal Business/Other	9.2%
No Answer	4.1%		
Total	100.0%	Total	100.0%

4.3.3 Frequency of Ferry Travel

Table 4-10 presents frequency of travel data from the 1999 survey for the weekday PM peak period Central Sound Corridor travel. Nearly 65% of survey respondents indicated that they had made six or more one-way trips in the past week, an increase over reported 1993 usage. Moreover, half of the respondents reported making 10 or more one-way trips in the past week. This further supports the conclusion that South Sound Corridor highly commuter-oriented.

Another parallel result to the Central Sound Corridor is the fact that “part-time” ferry travel of two to five one-way trips in the past week is more common than the six to nine trips per week category, yet the 10 or more trips category outweighs both of the former.

Table 4-10
Weekday PM Peak Period Frequency of Use — South Sound Corridor

<i>Frequency of Use</i>	<i>Distribution</i>
1st Ride in Past 7 Days*	10.1%
2 to 5 Rides in Past 7 Days	22.8%
6 to 9 Rides in Past 7 Days	15.0%
10 or More Rides in Past 7 Days	49.6%
No Answer	2.5%
Totals	100.0%

* 1st Ride in Past 7 Days includes passengers who answered: 1st ride in past year and 1st ride ever.

4.3.4 Round Trip Patterns and Methods

Table 4-5 displays round-trip travel patterns, including the mode, route and time for the opposite half of the round-trip for which a respondent was surveyed. Nearly 77% of survey respondents traveling in the South Sound Corridor during the weekday PM peak period were on the second half of a round-trip, only slightly lower than that observed in 1993.

Table 4-11
Weekday PM Peak Period Round-Trip Patterns and Methods — South Sound Corridor

<i>Round-Trip Segment & Method / Time</i>	<i>Today</i>	<i>Some Other Day</i>	<i>No Answer</i>	<i>Expanded Ridership</i>
Declared Initial Trip (Reported on 2nd Half of Round-Trip)				76.6%
Same Ferry Route	75.8%	1.3%	7.7%	2,581
Not Using Ferry System	3.7%	0.1%	0.1%	120
Different Ferry Route	9.4%	0.7%	0.2%	311
No Answer	0.4%	0.0%	0.7%	31
<i>Total Declared Initial Trip</i>	<i>89.2%</i>	<i>2.2%</i>	<i>8.6%</i>	<i>3,043</i>
Expected Return Trip (Reported on 1st Half of Round-Trip)				21.6%
Same Ferry Route	61.3%	19.0%	3.5%	718
Not Using Ferry System	5.8%	1.5%	0.8%	70
Different Ferry Route	2.7%	1.2%	0.0%	33
No Answer	1.8%	0.5%	2.0%	36
<i>Total Expected Return Trip</i>	<i>71.5%</i>	<i>22.2%</i>	<i>6.3%</i>	<i>857</i>
No Answer (Did Not Report Round-Trip Status)				1.9%
<i>No Answer</i>			<i>100.0%</i>	<i>75</i>
Expanded Ridership Total	3,328	256	391	3,975

In general, about 85% of weekday PM peak period riders on South Sound Corridor routes reported they were using or would use the same ferry route for the other half of their round-trip. Among the remaining 15%, those on the second half of a round-trip were more likely to have used a different route for the first half than another mode/highway route. However, those on the first half of their round-trip reported a higher propensity to use a non-ferry (highway) mode for their return trip than another ferry route. In any event, the reported use of a non-ferry mode for one-half of a round-trip in Table 4-5 is a bit surprising, given that three of the four routes in this corridor serve Vashon Island, which has no highway connections.

4.3.5 Access Mode / Boarding Method / Egress Mode

This section presents and compares access and egress mode shares and boarding method distributions for the South Sound Corridor between the 1999 and 1993 surveys. Note that the 1993 data were originally collected and presented in a different manner than the 1999 data. To facilitate comparison, the 1993 results were recomputed to approximate the methods and results presentation of the 1999 survey, which unlike the 1993 effort, implicitly assumed that all those who boarded in a vehicle also accessed and egressed the terminals in a vehicle. As such, the travel mode results are generally comparable between the two surveys, but small differences in the access and egress mode shares are as likely to be the result of differing collection methods as they are to be the result of real changes in behavior. Please see Section 3.5.2 in Chapter 3 for more information about these procedures.

Table 4-12 and Table 4-13 present boarding method and terminal access and egress mode information for the 1993 and 1999 survey results, respectively. Results from the 1999 survey show that approximately 65% of the South Sound Corridor ferry users during the weekday PM peak period boarded in a vehicle, with an average vehicle occupancy of 1.44 persons. The remaining 35% boarded as walk-ons, and of these walk-ons, about 4% brought along a bicycle. The corridor's boarding method results are almost identical to those of the 1993 survey, though the average vehicle occupancy has increased slightly from the 1.36 observed in 1993.

Access modes to the terminal for walk-on passengers appears to have changed substantially from largely pedestrian access in 1993 to a fairly even split between the three categories of pedestrian/bicycle, vehicle, and bus or shuttle in 1999 — 35% by walking or bicycling, 33% by vehicle, and 32% by bus or shuttle. However, the 1993 results probably overstate walk access and egress (and understate vehicle access and egress) when compared to 1999 results. This is because 1993 survey participants were asked how they came from their last stop and went to their first destination, which may include instances of walking from/to a parked vehicle ("intermediate stops"). Alternatively, the 1999 survey asked for the primary access and egress modes that were used to come from the person's initial origin and go to the person's final destination.

Table 4-12
Access Mode to Ferry – Boarding Method – Egress Mode from Ferry
1993 Weekday PM Peak Period – South Sound Corridor

<i>Access Mode to Ferry Terminal</i>	<i>Percent Distrib.</i>	<i>Boarding Method</i>	<i>Percent Distrib.</i>	<i>Mode Shares</i>	<i>Egress Mode from Ferry Terminal</i>	<i>Percent Distrib.</i>
Pedestrian/Bicycle	52.7%	Walked-On35.7%			Pedestrian/Bicycle	31.2%
By Vehicle*	27.2%	Pedestrian	96.0%		By Vehicle*	52.9%
By Bus or Shuttle	20.1%	Pedestrian w/ Bicycle	4.0%		By Bus or Shuttle	15.9%
Total	100.0%	Total	100.0%		Total	100.0%
In-Vehicle	100.0%	In-Vehicle64.3%			In-Vehicle	100.0%
		Vehicle Drivers*	73.8%			
		Vehicle Passengers	26.2%			
		Total	100.0%			
Total				100.0%		
Expanded Ridership Total				3,684		
* includes motorcycles						

Table 4-13
Access Mode to Ferry – Boarding Method – Egress Mode from Ferry
1999 Weekday PM Peak Period – South Sound Corridor

<i>Access Mode to Ferry Terminal</i>	<i>Percent Distrib.</i>	<i>Boarding Method</i>	<i>Percent Distrib.</i>	<i>Mode Shares</i>	<i>Egress Mode from Ferry Terminal</i>	<i>Percent Distrib.</i>
Pedestrian/Bicycle	35.3%	Walked-On		35.4%	Pedestrian/Bicycle	12.9%
By Vehicle*	32.7%	Pedestrian	95.7%		By Vehicle*	58.6%
By Bus or Shuttle	<u>32.0%</u>	Pedestrian w/ Bicycle	<u>4.3%</u>		By Bus or Shuttle	<u>28.4%</u>
Total	100.0%	Total	100.0%		Total	100.0%
In-Vehicle	100.0%	In-Vehicle		64.6%	In-Vehicle	100.0%
		Vehicle Drivers*	69.6%			
		Vehicle Passengers	<u>30.4%</u>			
		Total	100.0%			
Total				100.0%		
Expanded Ridership Total				3,975		
* includes motorcycles						

Keeping the above methodologies differences in mind, the comparison of the 1993 and 1999 data indicates that there has been a shift away from pedestrian access and egress modes and a shift toward vehicle access and egress. However, the increase in the use of transit to access or egress the terminals represents a significant change from the 1993 results, and one which has also been observed for the Central Sound Corridor. In the South Sound Corridor, the weekday PM peak period transit access share of walk-on riders jumped from 20% in 1993 to 32% in 1999. Similarly, the transit egress share increased from 16% in 1993 to 28% in 1999. This increase in transit use is likely a direct result of service improvements and coordinated schedules on the part of Kitsap Transit on the peninsula and King County Metro on Vashon Island and on the east side of the Sound.

Another interesting finding in the South Corridor is the apparent increase in the share of walk-on passengers using a vehicle to access and egress the terminal area, a trend which was not observed in the Central Sound corridor. This shift may be the result of an increasing number of persons keeping autos near one or both terminals and using the ferry system for cross-sound travel, rather than driving around via the increasingly congested Tacoma Narrows Bridge. This theory is supported by respondent parking data (see the individual route chapters for more information) as well as the range of origins and destinations observed. For example, in the eastbound direction on the Faunterloy-Southworth route, 26% of the survey day PM peak period ridership originated from Mason County, up from 8% in 1993. Similarly, Pierce County origins west of the Tacoma Narrows district increased to 12% of PM peak trips in 1999 compared to less than 5% for this cross-sound route in 1993. In the westbound direction, similar increases in origin and destination shares for locales away from the immediate terminal areas are observed. With an increasing share of passengers traveling longer distances, an increase in the percentage of walk-on passengers using vehicles to access and/or egress the ferry terminals would be expected.

4.3.6 Corridor Trip Origins and Destinations

Figure 4-3 displays the origin and destination locations of riders boarding the ferry by vehicle for the South Sound Corridor market. Contrary to that observed in the Central Sound Corridor market, trip origins and destinations in the South Corridor market are clustered relatively close to the respective terminals. Most origins and destinations are within south Kitsap County and the City of Seattle. The exceptions are mostly on the Faunterloy-Southworth route, where some riders are traveling from or to points in Mason and northwest Pierce Counties, who appear to be choosing the ferry over driving via the Tacoma Narrows Bridge and the I-5 corridor. This pattern of clustering is also consistent with the primarily commuter-oriented trip purposes between work and home in the PM peak period.

Figure 4-4 graphically displays the origin and destination locations of walk-on passengers. Many of the walk-on survey respondents on the Southworth-Vashon auto ferry route or the Seattle-Vashon passenger-only route reported that their trip involved a transfer at Vashon Island. These transferring walk-on passengers have been displayed in dark red on Figure 4-4 and reported as “SE-SO Walk Board” passengers, or passengers that are travelling between Seattle and Southworth via the Southworth-Vashon and Seattle -Vashon passenger-only routes.

Figure 4-3
Weekday Origin & Destination Locations for In-Vehicle Ferry Riders
South Sound Corridor Market

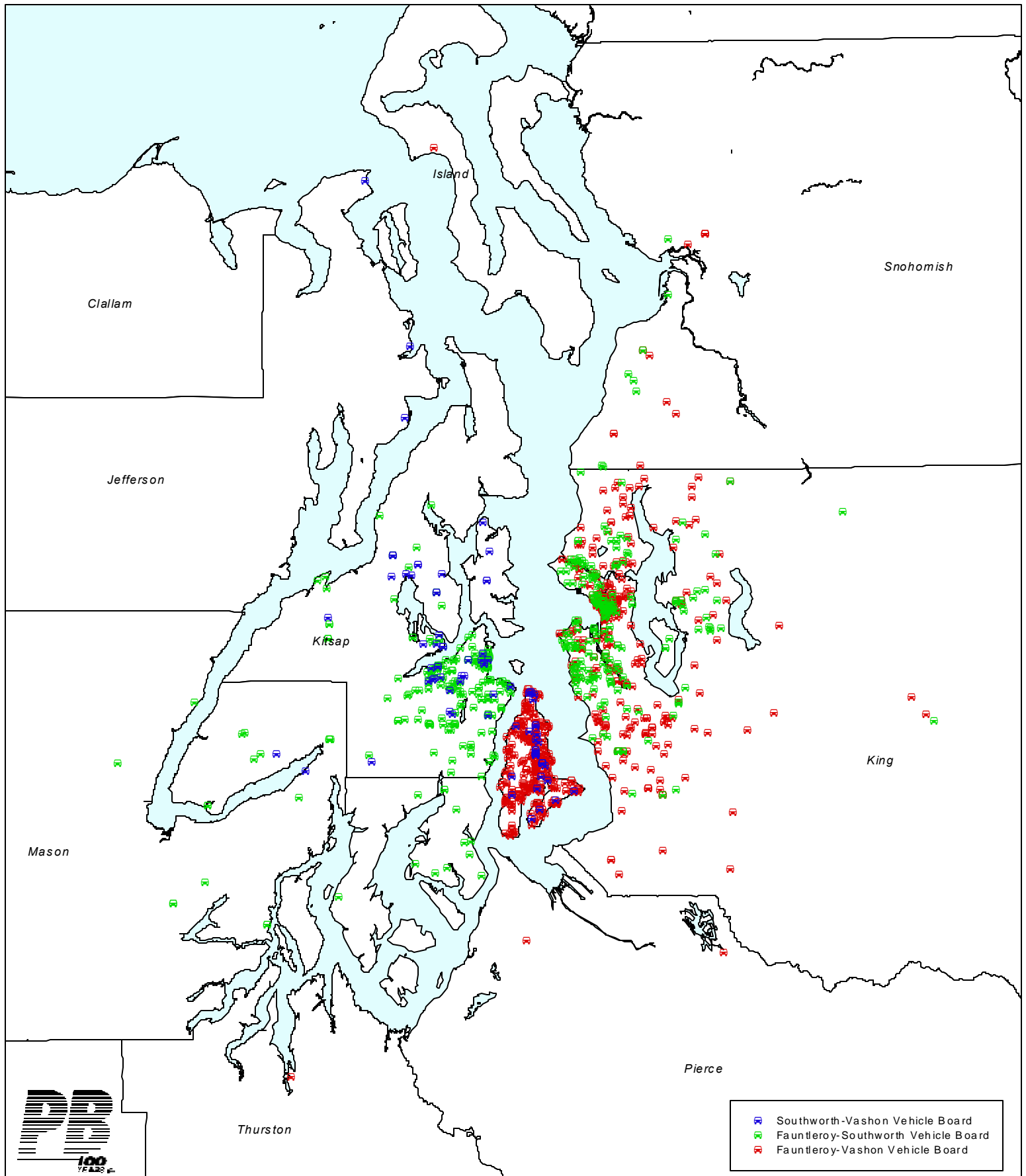
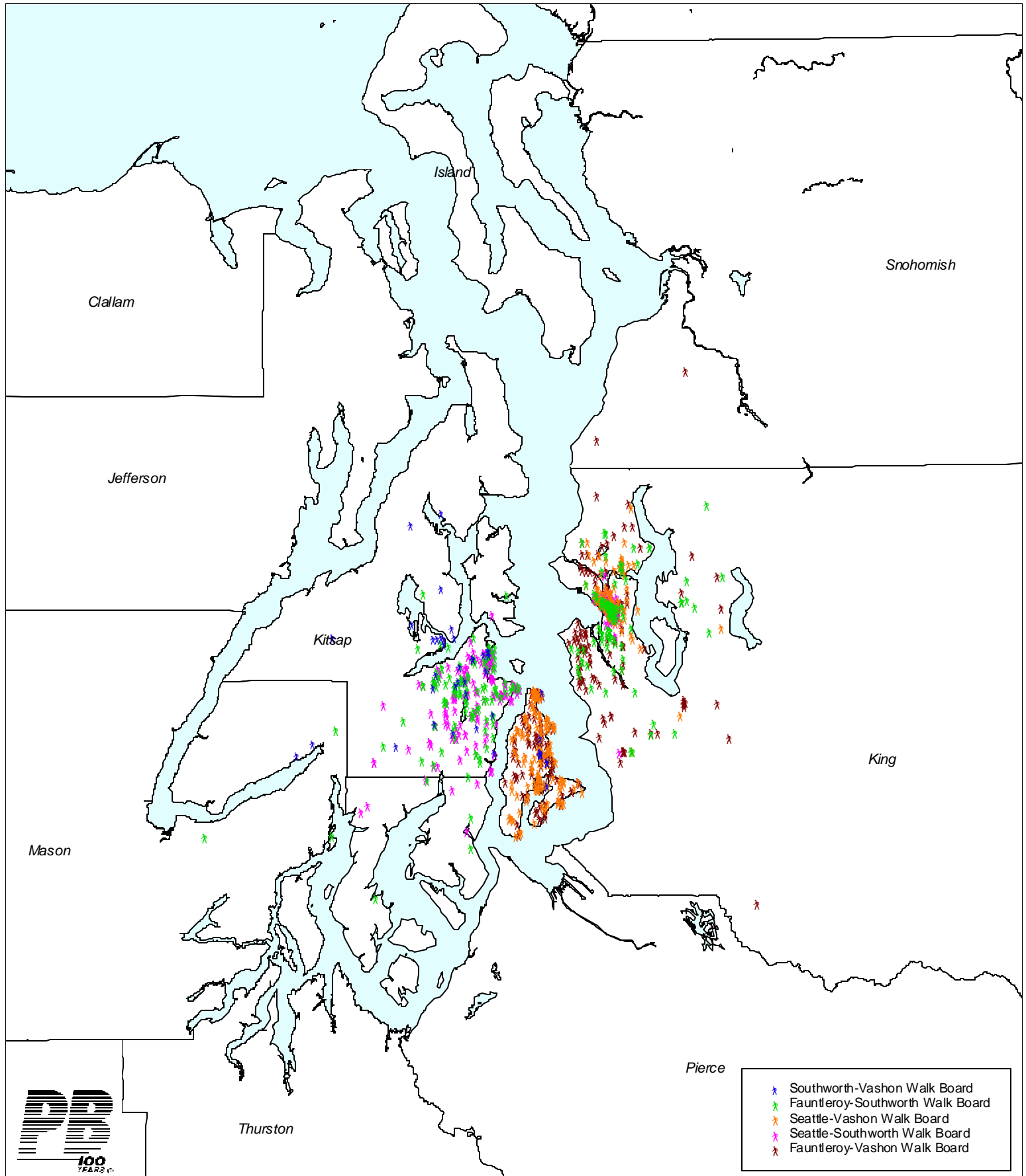


Figure 4-4
Weekday Origin & Destination Locations for Walk-On Ferry Riders
South Sound Corridor Market



4.4 SINGLE ROUTE CORRIDOR MARKETS

This section contains a brief discussion of the remaining three corridors, each of which is comprised of a single route that draws from a very distinct geographic market, as well as for the combined Anacortes–San Juan Islands and Anacortes–Sidney, B.C. routes, which do not fit the profile of the other corridors. The three single route corridor markets are Point Defiance–Tahlequah, Mukilteo–Clinton, and Port Townsend–Keystone. A notable common feature of the single route corridors, as well as the Anacortes-based routes, is the lack of available or convenient substitutes, both ferry and highway. This section does not include the more detailed corridor information presented for the Central and South Sound Corridors, simply because these single route markets are analyzed and discussed in detail in the individual route chapters starting with Chapter 5 of this document.

These three routes collectively comprise 17% of the system-wide weekday PM peak period ridership. The Point Defiance–Tahlequah route accounts for approximately 2.6% of system-wide ridership, Mukilteo–Clinton about 13%, and Port Townsend–Keystone less than 2%.

On an average daily and annual basis, WSF ticket sale-based ridership statistics indicate that the Point Defiance–Tahlequah route totals approximately 3% of system-wide ridership. Likewise, Mukilteo–Clinton represents 17%, and Port Townsend–Keystone totals about 3% of both the average daily and yearly ridership. By trip purpose, the Mukilteo–Clinton and Port Townsend–Keystone routes comprise slightly above average shares of non-commute oriented trips, reflecting the recreational opportunities on Whidbey Island and on the Olympic Peninsula.

These three routes display very different geographic ridership patterns. In the case of Point Defiance–Tahlequah, very compact travel patterns appear with a large number of origins and destinations located in the Tacoma urban area and south Vashon Island. Figure 4-5 displays these weekday origin and destination locations for both walk-on and in-vehicle passengers, using different icons for the two boarding modes. As expected, walk-on passengers have a slightly more dense pattern of origin and destination locations, while riders boarding in a vehicle have a more dispersed range, with minor clustering in Olympia and parts of south King County. The vast majority (84%) of riders in this route corridor board in a vehicle.

Figure 4-6 displays ridership patterns by boarding method for the Mukilteo–Clinton route, which display a similar origin and destination dispersion pattern on the east side of Puget Sound as was observed for the Edmonds–Kingston route. Boarding mode shares for Mukilteo–Clinton were also very similar to those observed on the Edmonds–Kingston route, at 19% walk-on passengers and 81% in-vehicle boardings. There are some clear walk-on ridership origin/destination clusters in downtown Seattle, Mukilteo, and Everett; however, trip origins and destinations for riders who boarded in a vehicle tend to be more distributed over a fairly large area. As would be anticipated given the Deception Pass Bridge at the north end of Whidbey Island, most island origins and destinations are concentrated toward the south end Whidbey.

The Port Townsend-Keystone route does not display a geographic ridership pattern similar to other WSF routes. As depicted in Figure 4-7, trip origins and destinations on the Port Townsend-Keystone ferry are widely dispersed (particularly for in-vehicle boardings), and do not suggest an obvious geographic market segment to the same degree as the other corridors. Ridership origin and destination locations range from Island County to as far south as Thurston County, with considerable scattering along the west side of the Puget Sound. Based on this dispersed ridership pattern, it is not unexpected that the Port Townsend-Keystone route has the lowest share of walk-on passengers among the identified corridor routes, at 8%.

Figure 4-8 presents the widely distributed trip origin and destination patterns of the Anacortes-San Juan Islands-Sidney, B.C. routes by boarding method. While the origin and destination locations in the islands are clearly confined by the geography, the mainland origins and destinations are all over the map, including both sides of Puget Sound, resulting in no clearly defined corridor or travel shed for island travel. The reader is referred to Chapters 16 and 17 for additional, more detailed information and survey results regarding the domestic and international San Juan routes.

Figure 4-5
Weekday Origin and Destination Locations
Point Defiance-Tahlequah Corridor

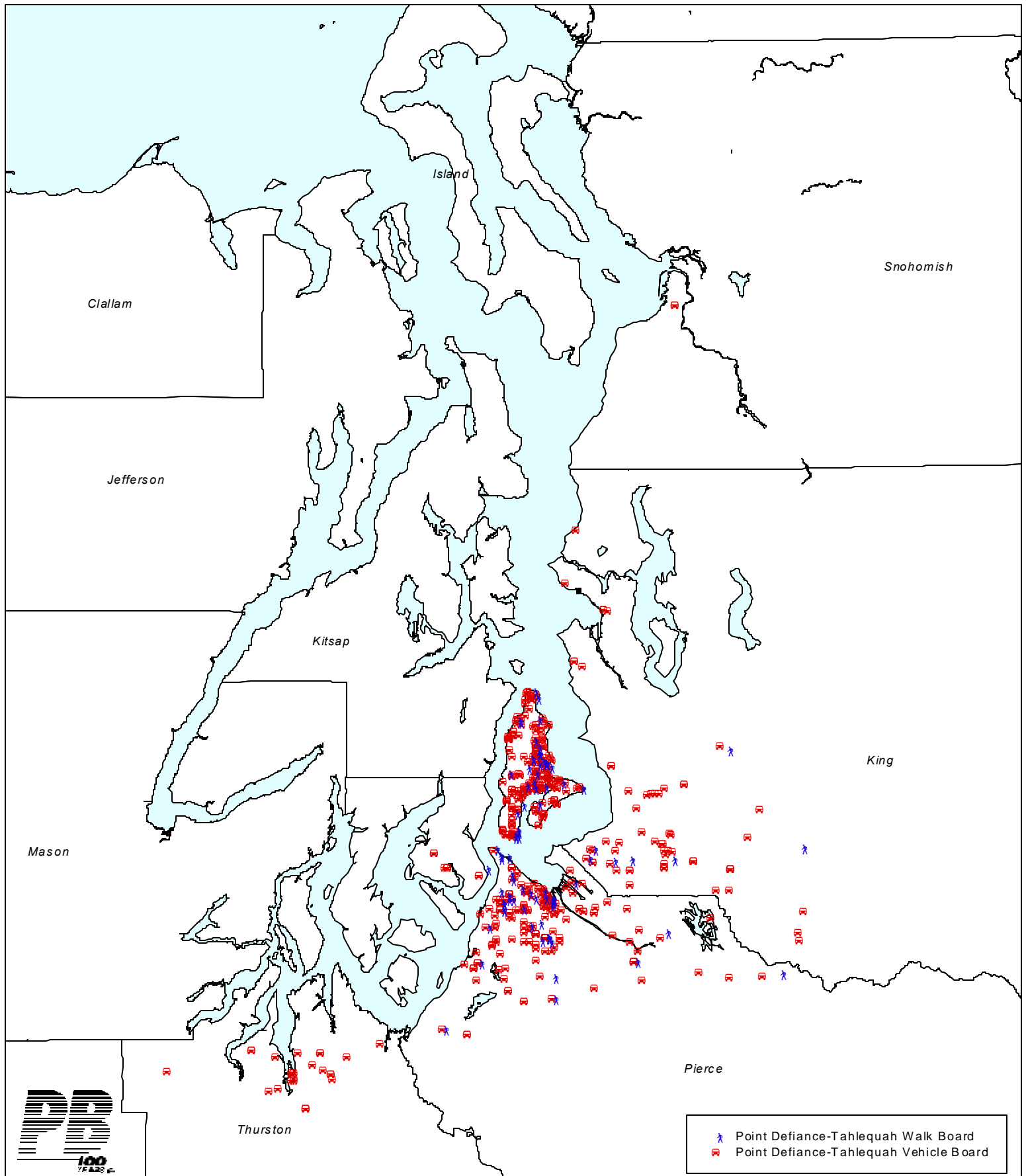


Figure 4-6
Weekday Origin and Destination Locations
Mukilteo-Clinton Corridor

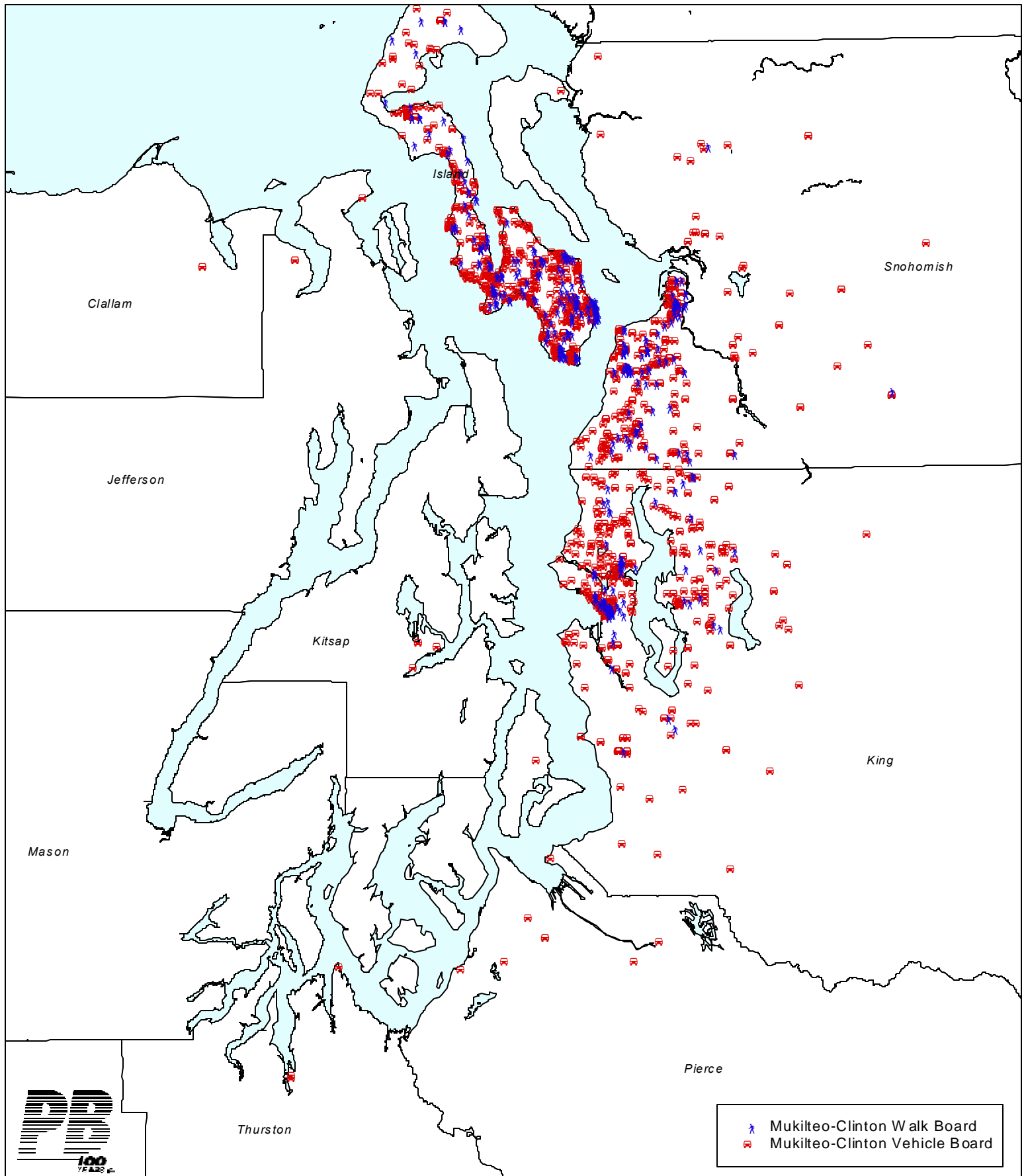


Figure 4-7
Weekday Origin and Destination Locations
Port Townsend-Keystone Corridor

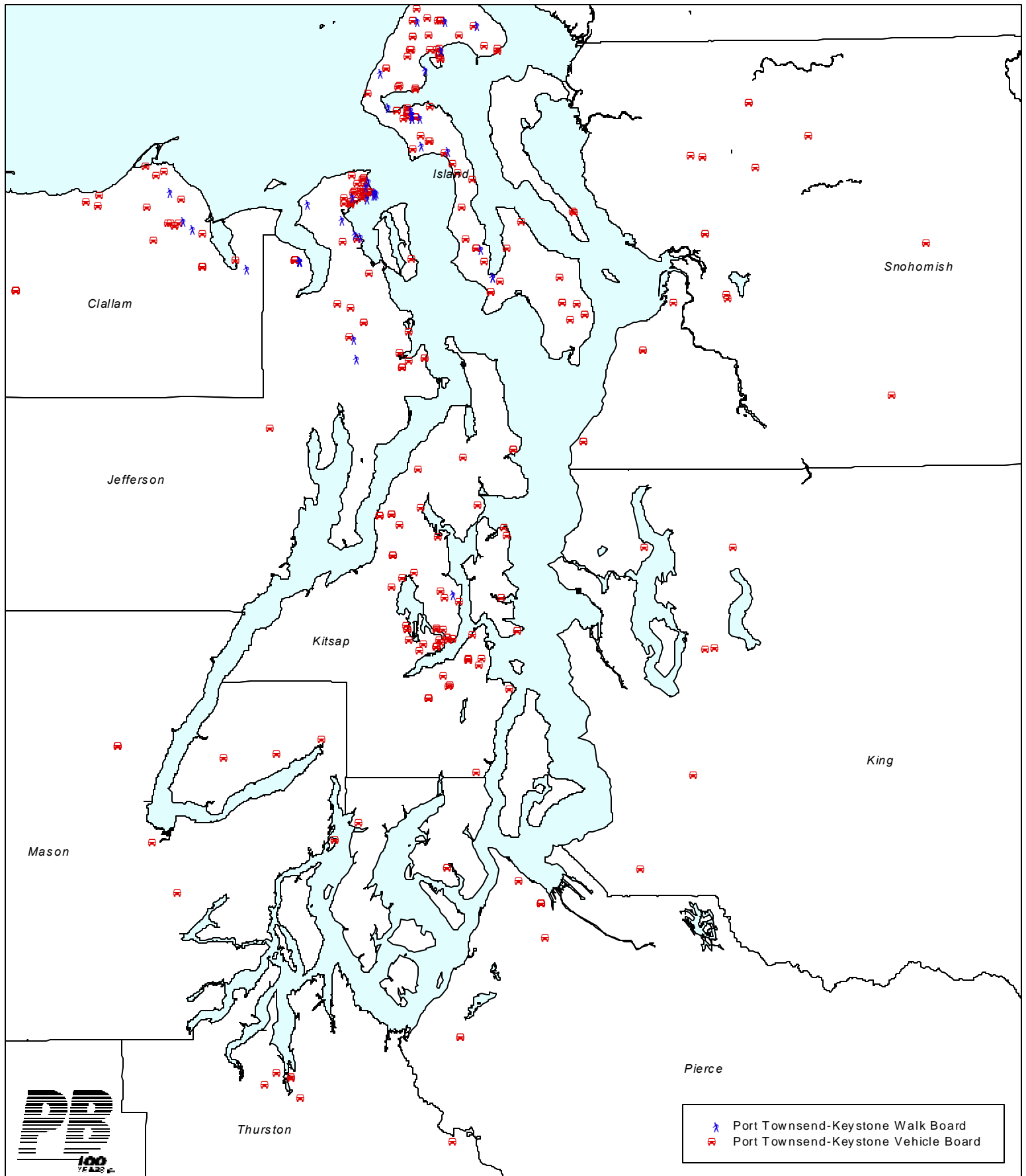


Figure 4-8
Weekday Travel — Origin and Destination Locations
Anacortes — San Juan Islands — Sidney, B.C. Routes

